

SatStream Systems Corporation

In the Matter of Review of the Emergency Alert System

EB Docket No. 04-296

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Notice of Proposed Rulemaking

Adopted: August 8, 2004

Comments on the NPRM from SatStream Systems Corporation

By way of introduction SatStream Systems Corporation currently manufactures satellite communications equipment which may be used in disseminating EAS to broadcasters. Our system is currently being deployed in New York State as an extra link in the EAS chain. We have other products in development which may be used to monitor and enhance the reliability of the Emergency Alert System.

SatStream is a member of the Partnership for Public Warning and we fully support the comments submitted to the Commission by PPW. We applaud the Commission for the attention now being given to the EAS through the NPRM.

We are providing additional comments only in relation to specific topics where we may have some useful insights to offer. But first – some general comments from one who began studying the EAS in some detail about 2 years ago.

Strange apparent facts about EAS

- 1 The primary reason for being of EAS – delivery of Presidential messages to the American public - has never been used. And it has never been fully tested. I understand that a portion of the system was accidentally activated one time providing an unscheduled test of the system.
- 2 The most common and useful employment of EAS – delivery of urgent local warnings – is not mandated by the federal government.
- 3 Broadcasters may be fined for not keeping a proper log of EAS activations related to local warnings, but any participation at all is actually voluntary.
- 4 While some of the technical characteristics of the broadcast EAS are well documented in Part 11 (as two tones being within .5 Hz) other equally important parameters such as the data rate have no specified tolerance.

Positive Observations regarding EAS as currently implemented

- 1 The FSK and Alert Tones are almost universally recognized by radio listeners. When they are heard listeners believe that they are about to hear government approved timely warnings of importance and substance.
- 2 The public has the perception that the system is in place and it works.
- 3 The addition of Amber Alert to EAS has brought positive public response.

Response to Specific Issues raised in the NPRM

Paragraph 3

We suggest that it is essential that the Commission or another federal agency such as DHS establish minimal rules that require state and local participation in the EAS. While in many states there is a very professional commitment from broadcasters, state broadcaster associations and emergency management organizations, in other states the situation is less sanguine. I would stress that the rules should establish a minimum level of participation taking into account that some states may wish to go far beyond the minimum requirements. Further, unique local situations may reveal grounds for accommodation of some variance from such rules. One of the best features of our federal system is the ability of states to become laboratories for innovation. That should not be stifled.

Paragraph 4

EAS continues to serve a vital role. With new technology different delivery systems from EAS originators to broadcasters makes sense today. Whatever means may be used to deliver EAS the last mile, continued use of the current Alert Tones (853/960 Hz tones) will get public attention and maintain public confidence through familiarity.

Paragraph 12

Amateur Radio Operators have established thousands of VHF and UHF repeaters throughout the country. These are often used for casual conversation under normal conditions but during emergencies they become an important communications asset when other infrastructure fails. These repeaters are not required to carry EAS Alerts. We would suggest clarification of the rules (including Part 97) to allow (not mandate) EAS dissemination on a voluntary basis by amateur radio repeater operators. There are two benefits. First, while many of these repeaters may be used by a few dozen amateurs in casual conversation during drive time, in many cases there are hundreds of other amateur operators listening. In effect repeaters are often the regional "Calling Channel" where contact may be established so there may be a useful listening audience here. Secondly – allowing amateur radio operators to get involved with EAS may encourage innovation by volunteer groups that may result in further developments in EAS technology and dissemination. There may be a large untapped base of potential no-cost development currently being held back by current rules (or at least the perception of current rules regarding "broadcasting"). If the commission should open this avenue I would expect articles addressing EAS to begin appearing in the amateur technical journals within a few months.

Paragraph 15

In our review of publicly available literature we have found that many State Emergency Communications Committees or other designated groups announce the date and time of monthly (and sometimes weekly) tests. While this does give

broadcasters a “heads up” it does make the results of the tests less than reliable as indicators of the actual health of the EAS distribution system. We will later present technology that would make testing more thorough and practical.

Paragraph 16

As a trickle down distribution system the EAS has some definite shortcomings that are obvious and well documented. The use of NWS as one more source of EAS distribution is helpful but does not fully solve the problem. Further EAS is in almost all cases a one-way distribution system with no delivery confirmation. At least one company offers an EAS distribution system using two-way VSAT but that system only guarantees that the EAS message has reached the broadcaster and provides no assurance that the message is actually broadcast on the air. We will later present technology to address this shortcoming.

Paragraph 22

We strongly support the PPW recommendation that DHS take the lead in this area – particularly in the day-to-day monitoring of the system. In discussing EAS with the public it is apparent that they know that we have an effective nationwide alert system that works reliably. Based on the anecdotal information we have collected and the failure to do end-to-end tests of top level Presidential Message dissemination it is our view that this public perception is unduly optimistic. We have seen many anecdotal reports of failures of the lowest tier stations to receive weekly or monthly test activations. It would seem essential that these anecdotal reports be collated, analyzed and used to effect timely improvements as required. A single federal agency should receive all test results for analysis.

Paragraph 24

It would seem that voluntary cooperation with the EAS would be a fundamental component of broadcasters’ local public service obligations. Still it would seem wise to clarify those responsibilities in a single minimal national standard.

We would suggest that a single federal agency should be responsible for monitoring the health of the EAS system and this monitoring should include from the outset an analysis of the following:

- How many stations failed to receive a weekly or monthly test? Why?
- How many stations activated EAS at the request of a local agency?
- For local activations – what was the purpose? Perhaps set classifications.
- How many stations or agencies accidentally activated EAS? How? Why?
- During a “real” EAS Alert – how many stations didn’t receive it?
- And – how many stations received it but failed to go on-air with the alert?

Unless accurate information is gathered at a single location we really lack the critical data to allow focus on the shortcomings of the EAS as currently deployed. At this time we find this information in informal broadcasters’ bulletin boards and while I am sure they do work on the problem, higher level visibility is important.

Paragraph 26

An important point is raised here. As mentioned in my comments at Para 24, it is important to build a database that documents every activation of EAS.

Again – relying only on some anecdotal information, in some areas EAS is probably being activated too often. If that continues, the good will of broadcasters may be tested. Worse, the public attentiveness to such alerts will eventually subside. We suggest that the Commission or another federal agency establish some common sense standards for activation of the EAS. Those standards should allow for some flexibility and perhaps require that deviations from the standards be reported or logged in part to allow some possible future changes in the standards. It seems important and obvious that until such standards are established the state organizations should work to establish working standards that make sense. Judicious use of FIPS codes will also help prevent Alert burnout for the public. Whatever rules may be established should not necessarily punish well intended activations by personnel who are doing what they think is right. Education will work best in this area.

Paragraph 27

As a manufacturer of satellite receivers optimized for EAS reception we heartily endorse the use of satellites for EAS dissemination. Our system now being deployed in New York State will include up-link transmitters at the State Emergency Management Office in Albany and several other very secure sites. In view of the possible effects of natural disasters and terrorism we cringe at the thought of using terrestrial infrastructure such as internet or cable to get from an Emergency Management Office to a broadband uplink site. For this reason the NY system employs narrow band SCPC so that there is no intermediate apparatus except a satellite between the originating office and the broadcasters.

We would discourage use of a national satellite feed (except for national level warnings) since local authorities would need to depend on other means to get their inputs to a central uplink site. We should bolster the EAS infrastructure such that major system failures will not compromise the entire system. In New York the loss of the PEP and many of the LP1 broadcasters on the World Trade Center building should be instructive in planning EAS infrastructure.

Paragraph 31

It is puzzling that in a time of increased security consciousness it seems that the ability of EAS to reach the public is not very high. Certainly in times of natural disaster the public will tend to turn on a radio, and they will more likely have a battery powered radio than a battery powered television. My experience in the late sixties may be of interest. At my junior high school around 1962 the main office had a large rack mounted public address system along with a prominently marked CONELRAD receiver. I expect that this was common practice. When I got my first job, my employer (an aerospace electronics manufacturer in then rural Redmond, Washington) had an under-the-building “bunker” with several civil defense radio transceivers and a rack mounted EBS receiver that I believe was

monitoring 3 Seattle area radio stations. I don't think this is happening now. I don't understand why not.

It would seem reasonable that larger companies, shopping malls, stadiums, hotels etc, should have EAS monitoring facilities. The cost of receivers now is a small fraction of that which responsible companies were paying in 1963. Perhaps this issue is beyond the scope of the NPRM and should be handled by state emergency management departments.

Paragraph 41

Security should be of some concern. It is not difficult to produce a valid EAS message and broadcast it in such a manner that a local station might pick it up and relay it to other stations. However this would need to be done with a transmitter brought into close proximity with the local station EAS receiver antenna. This does not seem likely a high value target or goal for terrorists. As many stations now monitor several EAS sources jamming may be less of a concern. We will later suggest some technological means of detecting false or inadvertent activation of EAS Alerts so that public officials can rapidly address the event should it occur.

Paragraph 43

Yes, yes, yes. The PEP system must be tested and it should be tested on a weekly basis at a random time. Again – I've heard one anecdote wherein a technician at a broadcast facility was reminded to be sure to get the receiver back on line by Thursday because there is a test coming through!

The national test could be extremely brief and it could be done at a somewhat random time during early morning hours when listeners are few. Further, the FSK message could be very short, the Alert Tone duration minimal and the voice announcement very terse. Weekly tests should be somewhat random and the results of every test should be documented and reported for analysis.

Paragraph 46

A brief review of enforcement activities suggests that it is doing some good. However the most important purpose of EAS – receiving and disseminating alerts to the public may fail due to a signal not received. For this it appears there is no penalty at this time. I specifically support the PPW comment regarding a reduction of fines when the infraction is promptly and cooperatively corrected.

Paragraph 47

Many of our comments have been directed at the issue of reliability of the EAS as currently implemented. These reliability issues are often not in the realms of rocket science. Failures occur when technicians forget to plug in cables, when atmospheric conditions preclude reception of an LP1 station. Other failures occur when someone pushes the wrong button and takes the EAS audio feed off the main panel, or when someone pushes a button and an imminent flood warning

goes out to a large region. The current one-way trickle down system has some serious shortcomings that can be corrected at minimal expense without adding complexity.

First, consider the sad situation we have now. Someone in X county is showing a visitor the new EAS Box and pushes the button not realizing that the signal is going out over the state relay system. Fortunately it only goes out in a few counties. Within a few minutes the local television station reporter is calling to find out how soon the dam is going to collapse. The state emergency management director gets dozens of calls – and knows absolutely nothing about the alleged danger or the EAS alert. That director will probably be the last to know about the EAS because the system is one-way. Consider another possible scenario. Someone in Y county gets word that the earth dam above town is showing signs of failure. He calls the state emergency management office. Immediately the EAS Alert goes out to every radio station in the state. The FIPS code comparison at most stations filter out the alert in areas not affected. The emergency management director has gotten out the alert – or so they think. But if the two stations in the area of potential inundation had a wrong FIPS code, or a cable unplugged, or bad signal reception from the big city (and NWS somehow didn't pick up the alert) then everything will work except that residents in the area won't get the Alert. And the people who could do something about it won't know.

We suggest a radical change that requires no changes in the existing system and imposes no additional burden on broadcasters. We are expecting to release a new product in January 2005 that will monitor all of the local radio stations and NWS. If the Emergency Office pushes the button to send an Alert they will receive within a few minutes an exception report indicating any stations that did not broadcast the alert. Conversely, if a local station goes on-air with an Alert that is not coming from the central office, they will get a report on the details of that Alert – including the call sign and contact information for the station that has originated the Alert. This system can then be used to almost fully automate the weekly and monthly tests. Reports for the performance of the entire system would be available a few minutes after the test goes out. In the scenario of a missed alert in a critical area, knowledge of this failure to communicate would be immediately known by the responsible officials who could then try EAS again and also contact radio stations and officials in the affected area directly. In the longer term defects and shortcomings can be fixed.

Our monitor not only captures all information regarding EAS Alerts in a given area but it also analyzes the EAS in terms of adherence to the specifications. The complete report on each EAS transmission is sent by internet to a server.

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